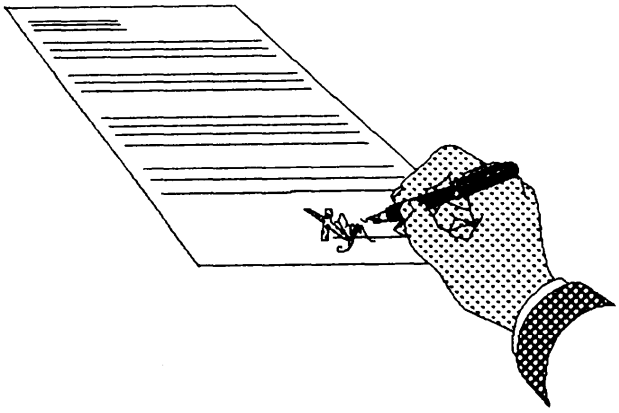
CHAPTER 2

TECHNICAL ADMINISTRATION

Technical administration is basically the filling out of paperwork required to complete a task. Whether the task is maintenance or repair in nature, it is not fully completed until all documenting paperwork has been finalized. You, as the technician, are responsible for ensuring that all paperwork is completed for each task you are assigned.



THE MAINTENANCE DATA SYSTEM (MDS)

The Maintenance Data System (MDS) provides a means of recording maintenance actions in substantial detail. This allows a variety of information concerning these actions and the performance of equipment involved to be retrieved. (In older documents, you may see the system refereed to as MDCS.) One of the major objectives of the MDS is to provide the capability of reporting configuration changes. In the following paragraphs, we will describe MDS subsystems that you will use frequently.

MAINTENANCE DATA SYSTEM (MDS) FORMS

In the following paragraphs we will briefly discuss the MDS forms that you as an ET are most likely to come across in your daily routine. For more in-depth information on the MDS forms, we recommend that you read chapter 9 of OPNAVINST 4790.4, *Ships' Maintenance and Material Management (3-M) Manual.* Because the supply forms associated with the MDS have been discussed in other training manuals, we will not cover them here.

Ship's Maintenance Action Form-OPNAV 4790/2K

This form, shown in figure 2-1, is the primary maintenance form. It is used by maintenance personnel to report (1) deferred maintenance actions and (2) all completed maintenance actions (including previously deferred actions).

The OPNAV 47902K contains six sections that require entries, depending on the type of maintenance action being reported. The form is printed on paper that does not require carbon to make multiple copies. Whenever you make an entry on this form, print the information, using all CAPITAL letters. Be sure the information is legible and inserted within the "tic" marks. If you make an error, line it out using a single line and enter the correct information.

Supplemental Form-OPNAV 4790/2L

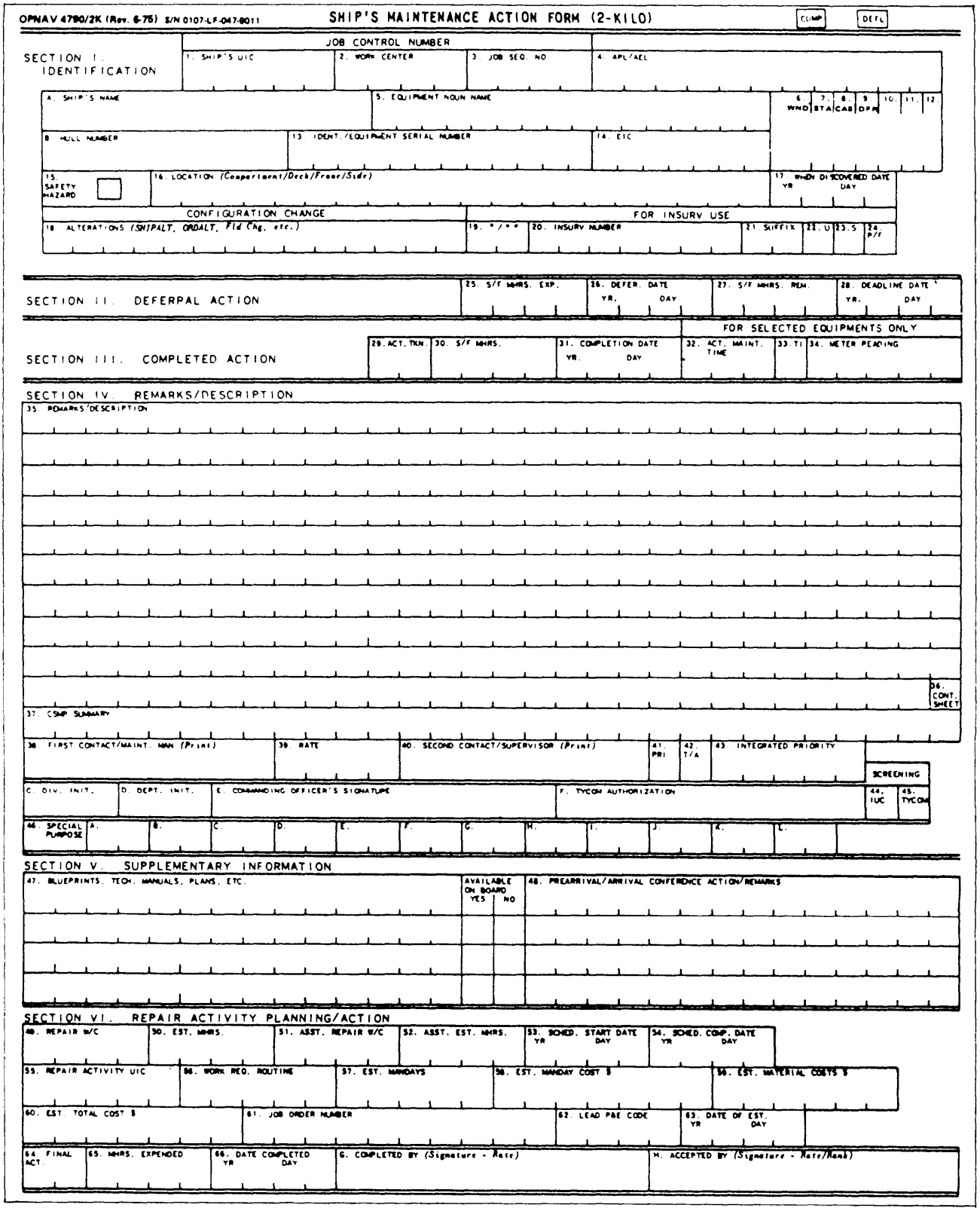
This form, illustrated in figure 2-2, is used to provide amplifying information for a maintenance action reported on a 2K form. For example, you may include on the 2L information from drawings, listings, associated parts placement, part labels, and the like, for use by a repair activity.

When you need to use an OPNAV 4790/2L with an OPNAV 4790/2K, enter in block 35 of the 2K the notation "2L USED."

Maintenance Planning and Estimating Form-OPNAV 4790/2P

This form is used with an OPNAV 4790/2K that defers maintenance to be done by an IMA under the Intermediate Maintenance Management System (IMMS). It provides information necessary to allow screening and planning to be done in detail.

Figure 2-3 illustrates this form as it may appear when planning and scheduling have been completed by a repair activity. Chapter 12 of OPNAVINST 4790.4B contains detailed information on the use of the form.


OPNAV 4790/2K (Rev. 6-75) S/N 0107-LF-047-8011

SHIP'S MAINTENANCE ACTION FORM (2-KILO)

CUMP | DEFL

SECTION I. IDENTIFICATION

JOB CONTROL NUMBER

1. SHIP'S UIC | 2. WORK CENTER | 3. JOB SEQ. NO | 4. APL/AEL

A. SHIP'S NAME | 5. EQUIPMENT NOUN NAME | 6 WND | 7. STA | 8. CAB | 9. DFR | 10. | 11. | 12.

B. HULL NUMBER | 13. IDENT./EQUIPMENT SERIAL NUMBER | 14. ETC

15. SAFETY HAZARD | 16. LOCATION (Compartment/Deck/Frame/Side) | 17. WHEN DISCOVERED DATE YR DAY

CONFIGURATION CHANGE | FOR INSURV USE

18. ALTERATIONS (SHIPALT, ORDALT, Fld Chg, etc.) | 19. */** | 20. INSURV NUMBER | 21. SUFFIX | 22. U | 23. S | 24. P/F

SECTION II. DEFERRAL ACTION

25. S/F MHRS. EXP. | 26. DEFER. DATE YR. DAY | 27. S/F MHRS. REM. | 28. DEADLINE DATE YR. DAY

FOR SELECTED EQUIPMENTS ONLY

SECTION III. COMPLETED ACTION

29. ACT. TKN. | 30. S/F MHRS. | 31. COMPLETION DATE YR. DAY | 32. ACT. MAINT. TIME | 33. TI | 34. METER READING

SECTION IV. REMARKS/DESCRIPTION

35. REMARKS/DESCRIPTION

36. CONT. SHEET

37. CSMP SUMMARY

38. FIRST CONTACT/MAINT. MAN (Print) | 39. RATE | 40. SECOND CONTACT/SUPERVISOR (Print) | 41. PRI | 42. T/A | 43. INTEGRATED PRIORITY

SCREENING

C. DIV. INIT. | D. DEPT. INIT. | E. COMMANDING OFFICER'S SIGNATURE | F. TYCOM AUTHORIZATION | 44. IUC | 45. TYCOM

46. SPECIAL PURPOSE | A. | B. | C. | D. | E. | F. | G. | H. | I. | J. | K. | L.

SECTION V. SUPPLEMENTARY INFORMATION

47. BLUEPRINTS, TECH. MANUALS, PLANS, ETC. | AVAILABLE ON BOARD YES | NO | 48. PREARRIVAL/ARRIVAL CONFERENCE ACTION/REMARKS

SECTION VI. REPAIR ACTIVITY PLANNING/ACTION

49. REPAIR W/C | 50. EST. MHRS. | 51. ASST. REPAIR W/C | 52. ASST. EST. MHRS. | 53. SCHED. START DATE YR DAY | 54. SCHED. COMP. DATE YR DAY

55. REPAIR ACTIVITY UIC | 56. WORK REQ. ROUTING | 57. EST. MANDAYS | 58. EST. MANDAY COST $ | 59. EST. MATERIAL COSTS $

60. EST. TOTAL COST $ | 61. JOB ORDER NUMBER | 62. LEAD P&E CODE | 63. DATE OF EST. YR DAY

64. FINAL ACT. | 65. MHRS. EXPENDED | 66. DATE COMPLETED YR DAY | G. COMPLETED BY (Signature - Rate) | H. ACCEPTED BY (Signature - Rate/Rank)

Figure 2-1.—OPNAV 4790/2K, Ship's Maintenance Action Form.

OPNAV 4790/2L (Rev 4-73) S/N 0107-LF-770-3080 SUPPLEMENTAL FORM (2-LIMA)

SECTION I. IDENTIFICATION

A SHIP'S NAME	B HULL NUMBER	JOB CONTROL NUMBER C SHIP'S UIC	D WORK CENTER	E JOB SEQ NO
		F CONTINUATION FOR ☐ 2K ☐ 2L ☐ 2P		

SECTION II. REMARKS/SKETCHES

G

SECTION III. AUTHENTICATION

H FIRST CONTACT/MAINTENANCE MAN (Print)	I DATE YR DAY	J SECOND CONTACT/SUPERVISOR (Print)	K DATE YR DAY

Figure 2-2.—OPNAV 4790/2L Supplemental Form.

OPNAV 4790/2P (6-84) MAINTENANCE PLANNING & ESTIMATING FORM (P & E)

SECTION I. PLANNING

JOB CONTROL NUMBER

A SHIP'S NAME	B HULL NUMBER	1 SHIP'S UIC	2 WORK CENTER	3 JOB SEQ NO
USS WHITE PLAINS	AFS 4	05835	EE01	1608

4 PERIODIC MAINTENANCE REQUIREMENT	5 PERIODICITY	6 YYMM ISSUED	7 SPECIAL DATA

8 SCREENING ACTION

	IUC	TYCOM	
a	☐	h. ☐	DEPOT ACCOMPLISH
b	☒	☒	IMA ACCOMPLISH
c	☐	i. ☐	TSU/NAVSEC/NOSSO/ETC
d	☐	k. ☐	SHIPS FORCE (IMA) (DEPOT) ASSIST
e	☐	l. ☐	SHIP TO SHOP
f	☐	m. ☐	ACCOMPLISH WITH MODIFICATIONS
g	☐	n. ☐	DISAPPROVE

9 QUALITY ASSURANCE REQUIREMENTS

a. ☐	SUB SAFE	g. ☐	SPECIAL CLEANING
b. ☐	LEVEL I	h. ☒	SPECIAL TESTING
c. ☐	NUCLEAR LEVEL I	i. ☐	SPECIAL IDENTIFICATION
d. ☐	NON DESTRUCT TEST	j. ☐	NOISE CRITICAL
e. ☐	NUCLEAR WORK PROCEDURES	k. ☐	RADIOLOGICAL CONTROL
f. ☐	SUBMARINE ANTENNA ENGINEERING DIVISION	l. ☐	OTHER CONTROLS

10 SPECIAL REQUIREMENTS

a.	03	KEY EVENT
b.	☐	SPECIAL INTEREST
c.	☐	DRY DOCK REQUIRED
d.	☒	PRE OVERHAUL TEST REQUIRED
e.	☒	POST OVERHAUL TEST REQUIRED
f.	☐	DEPARTURE TEST REQUIRED

C IUC SIGNATURE	D TYCOM SIGNATURE	11 NORMALLY DONE BY
		a. ☐ S/F b. ☐ IMA c. ☐ DEPOT

SECTION II. SCHEDULING

12 LEAD WORK CENTER	13 SCHED START DATE (YR DA)	14 SCHED COMP DATE (YR DA)	15 EST MHRS	16 KEY OP	17 TASK
38A	62 45	62 60	0140		
18 ASST WORK CENTER	19 SCHED START DATE (YR DA)	20 SCHED COMP DATE (YR DA)	21 EST MHRS	22 KEY OP	23 TASK
51A	62 47	62 58	0040		
24 ASST WORK CENTER	25 SCHED START DATE (YR DA)	26 SCHED COMP DATE (YR DA)	27 EST MHRS	28 KEY OP	29 TASK
52A	62 45	62 59	0100		
30 ASST WORK CENTER	31 SCHED START DATE (YR DA)	32 SCHED COMP DATE (YR DA)	33 EST MHRS	34 KEY OP	35 TASK
36 ASST WORK CENTER	37 SCHED START DATE (YR DA)	38 SCHED COMP DATE (YR DA)	39 EST MHRS	40 KEY OP	41 TASK
42 ASST WORK CENTER	43 SCHED START DATE (YR DA)	44 SCHED COMP DATE (YR DA)	45 EST MHRS	46 KEY OP	47 TASK

SECTION III. TECHNICAL DOCUMENTATION

48	ON BOARD YES	NO

SECTION IV. IUC/REPAIR ACTIVITY/TYCOM REMARKS

49 IMA LIMIT REPAIRS TO 600 $ ROV MATERIAL

SECTION V. SUPPLEMENTAL PLANNING

50 EST MANDAYS	51 EST MANDAYS COST $	52 EST MATERIAL COST $	53 EST TOTAL COST $	54

S/N 0107-LF-770-3079

Figure 2-3.—OPNAV 4790/2P, Maintenance Planning and Estimating Form.

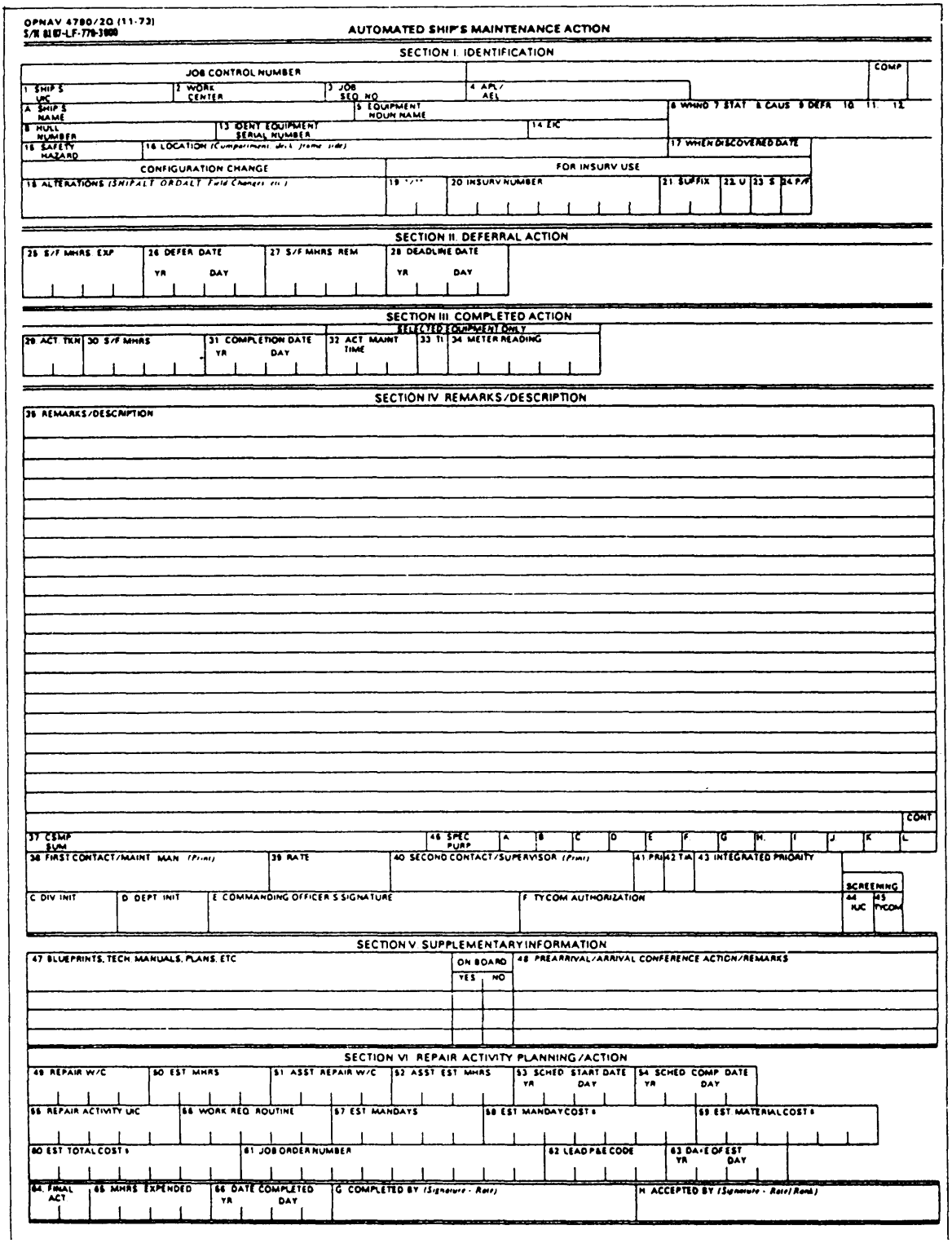


Figure 2-4.—OPNAV 4790/2Q, Automated Ship's Maintenance Action Form

Automated Ship's Maintenance Action Form-OPNAV 4790/2Q

This form, shown in figure 2-4, is basically the same as the 4790/2K, except that it is filled in by computer. It contains the same information as the 2K. You may enter additional information by hand as necessary. You may also use this form as an automated work request and in preparation for INSURV.

NOTE: Data entered into the computer is checked for accuracy and completeness. Elements that contain

errors are brought to the attention of the operator for correction as required by OPNAVINST 4790.4.

Automated Work Request (AWR)-OPNAV 4790/2R

This form is produced by the computer and combines the basic information submitted on the OPNAV 4790/2K and the planning information submitted on the OPNAV 4790/2P, if the 2P has been entered into the IMMS. A simulated AWR, produced under the Shipboard Non-Tactical ADP System (SNAP), is a valid work request and will be accepted by all involved activities (see figure 2-5). An AWR may be used for any of the following purposes:

- To describe all work and planning information relating to a specific job
- To enter planning information relating to a specific job with the OPNAV 4790/2K replacing the OPNAV 4790/2P
- By an IMA to conduct advance planning of a tended unit's availability

Chapter 12 of OPNAVINST 4790.4 contains detailed information on this form.

Ship's Configuration Change Form–OPNAV 4790/CK and Ship's Configuration Change Form Continuation Page–OPNAV 4790/CK(C)

These forms shown in figures 2-6A and 2-6B are used to report configuration changes at the individual equipment level.

When you use the OPNAV 4790/CK form, you do not need to document the associated maintenance action on an OPNAV 4790/2K form. The OPNAV 4790/CK form is used both as a closing deferral for reporting the accomplishment of a previously deferred maintenance action that results in a configuration change, and as a completed maintenance action (no prior deferral) reporting a configuration change.

A configuration change occurs whenever a maintenance action results in the following situations:

1. Addition or installation of any new equipment.
2. Deletion or removal of any installed equipment.
3. Replacement or exchange of any equipment. A replacement or exchange is reported as the removal of an installed equipment and installation of a new equipment.
4. Modification of any installed equipment. A modification results from a maintenance action that alters the design or operating characteristics of the equipment, or a maintenance action in which nonstandard replacement parts (not identified on the APL or in the technical manual) are used.
5. Relocation of any equipment.
6. Accomplishment of any alteration directive.

Two excellent documents that provide block-by-block instructions for completing the OPNAV 4790/CK are OPNAVINST 4790.4 (3-M Manual) and SPCCINST 4441.170, the *COSAL Use and Maintenance Manual.*

CURRENT SHIP'S MAINTENANCE PROJECT (CSMP)

The CSMP is an administrative system that provides the command and work center with the management data needed for the systematic accomplishment of repair and alteration of ship's hull, installed equipment, and material. It identifies at any one time the backlog of deferred maintenance for each work center. The MDS provides the means for gathering this information. If the information provided is not accurate or up-to-date or is improperly used by supervisors or maintenance technicians, the CSMP system is worthless.

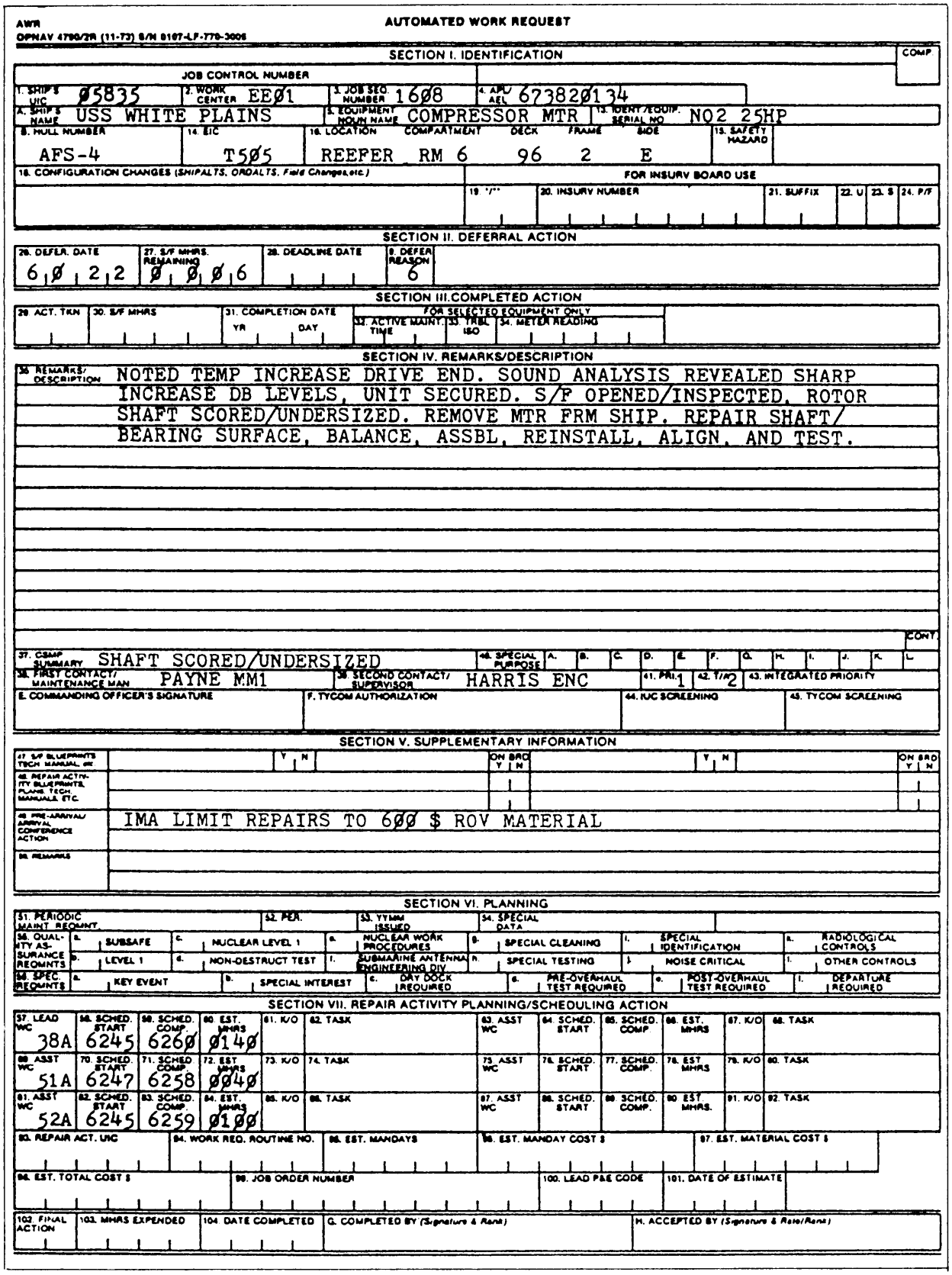
The usefulness of the MDS depends upon your accuracy, thoroughness, and timeliness in reporting information. The MDS is a system in which potential benefits are directly proportional to the efforts applied. Programs for improving reliability, maintainability, and logistic support of fleet equipment depend on how conscientiously you adhere to reporting procedures.

PLANNED MAINTENANCE SYSTEM (PMS)

The Planned Maintenance System provides each command with a simple standard means for planning, scheduling, controlling, and performing planned maintenance of all equipment. PMS maintenance actions are the minimum required to maintain the equipment in a fully operable condition. Maintenance procedures are contained on cards called "maintenance requirement cards" (MRCs).

Maintenance Requirement Cards (MRCs)

The MRCs provide detailed information for performing preventive maintenance. They state exactly



AWR

OPNAV 4790/2R (11-73) S/N 0107-LF-770-3006

AUTOMATED WORK REQUEST

SECTION I. IDENTIFICATION

COMP

JOB CONTROL NUMBER

1. SHIP'S UIC	2. WORK CENTER	3. JOB SEQ. NUMBER	4. APD/AEL
05835	EE01	1608	673820134

5. SHIP'S NAME	6. EQUIPMENT NOUN NAME	12. IDENT/EQUIP. SERIAL NO
USS WHITE PLAINS	COMPRESSOR MTR	NO2 25HP

8. HULL NUMBER	14. EIC	16. LOCATION COMPARTMENT	DECK	FRAME	SIDE	13. SAFETY HAZARD
AFS-4	T505	REEFER RM 6	96	2	E	

18. CONFIGURATION CHANGES (SHIPALTS, ORDALTS, Field Changes, etc.)	FOR INSURV BOARD USE					
	19. "/"	20. INSURV NUMBER	21. SUFFIX	22. U	23. S	24. P/F

SECTION II. DEFERRAL ACTION

26. DEFER. DATE	27. S/F MHRS. REMAINING	28. DEADLINE DATE	9. DEFER REASON
6 0 2 2	0 0 0 6		6

SECTION III. COMPLETED ACTION

29. ACT. TKN	30. S/F MHRS	31. COMPLETION DATE YR	DAY	FOR SELECTED EQUIPMENT ONLY 32. ACTIVE MAINT. TIME	33. TRBL ISO	34. METER READING

SECTION IV. REMARKS/DESCRIPTION

35. REMARKS/DESCRIPTION: NOTED TEMP INCREASE DRIVE END. SOUND ANALYSIS REVEALED SHARP INCREASE DB LEVELS, UNIT SECURED. S/F OPENED/INSPECTED, ROTOR SHAFT SCORED/UNDERSIZED. REMOVE MTR FRM SHIP. REPAIR SHAFT/ BEARING SURFACE, BALANCE, ASSBL, REINSTALL, ALIGN, AND TEST.

CONT.

37. CSMP SUMMARY	46. SPECIAL PURPOSE	A.	B.	C.	D.	E.	F.	G.	H.	I.	J.	K.	L.
SHAFT SCORED/UNDERSIZED													

38. FIRST CONTACT/ MAINTENANCE MAN	39. SECOND CONTACT/ SUPERVISOR	41. PRI.	42. T/P	43. INTEGRATED PRIORITY
PAYNE MM1	HARRIS ENC	1	2	

E. COMMANDING OFFICER'S SIGNATURE	F. TYCOM AUTHORIZATION	44. IUC SCREENING	45. TYCOM SCREENING

SECTION V. SUPPLEMENTARY INFORMATION

		Y	N	ON BRD Y	ON BRD N		Y	N		ON BRD Y	ON BRD N
47. S/F BLUEPRINTS TECH MANUAL etc.											
48. REPAIR ACTIVITY BLUEPRINTS, PLANS, TECH. MANUALS, ETC.											
49. PRE-ARRIVAL/ ARRIVAL CONFERENCE ACTION	IMA LIMIT REPAIRS TO 600 $ ROV MATERIAL										
50. REMARKS											

SECTION VI. PLANNING

51. PERIODIC MAINT. REQUMT.	52. PER.	53. YYMM ISSUED	54. SPECIAL DATA

56. QUALITY ASSURANCE REQUMTS	a. SUBSAFE	c. NUCLEAR LEVEL 1	e. NUCLEAR WORK PROCEDURES	g. SPECIAL CLEANING	i. SPECIAL IDENTIFICATION	k. RADIOLOGICAL CONTROLS
	b. LEVEL 1	d. NON-DESTRUCT TEST	f. SUBMARINE ANTENNA ENGINEERING DIV	h. SPECIAL TESTING	j. NOISE CRITICAL	l. OTHER CONTROLS
58. SPEC. REQUMTS	a. KEY EVENT	b. SPECIAL INTEREST	c. DRY DOCK REQUIRED	d. PRE-OVERHAUL TEST REQUIRED	e. POST-OVERHAUL TEST REQUIRED	f. DEPARTURE REQUIRED

SECTION VII. REPAIR ACTIVITY PLANNING/SCHEDULING ACTION

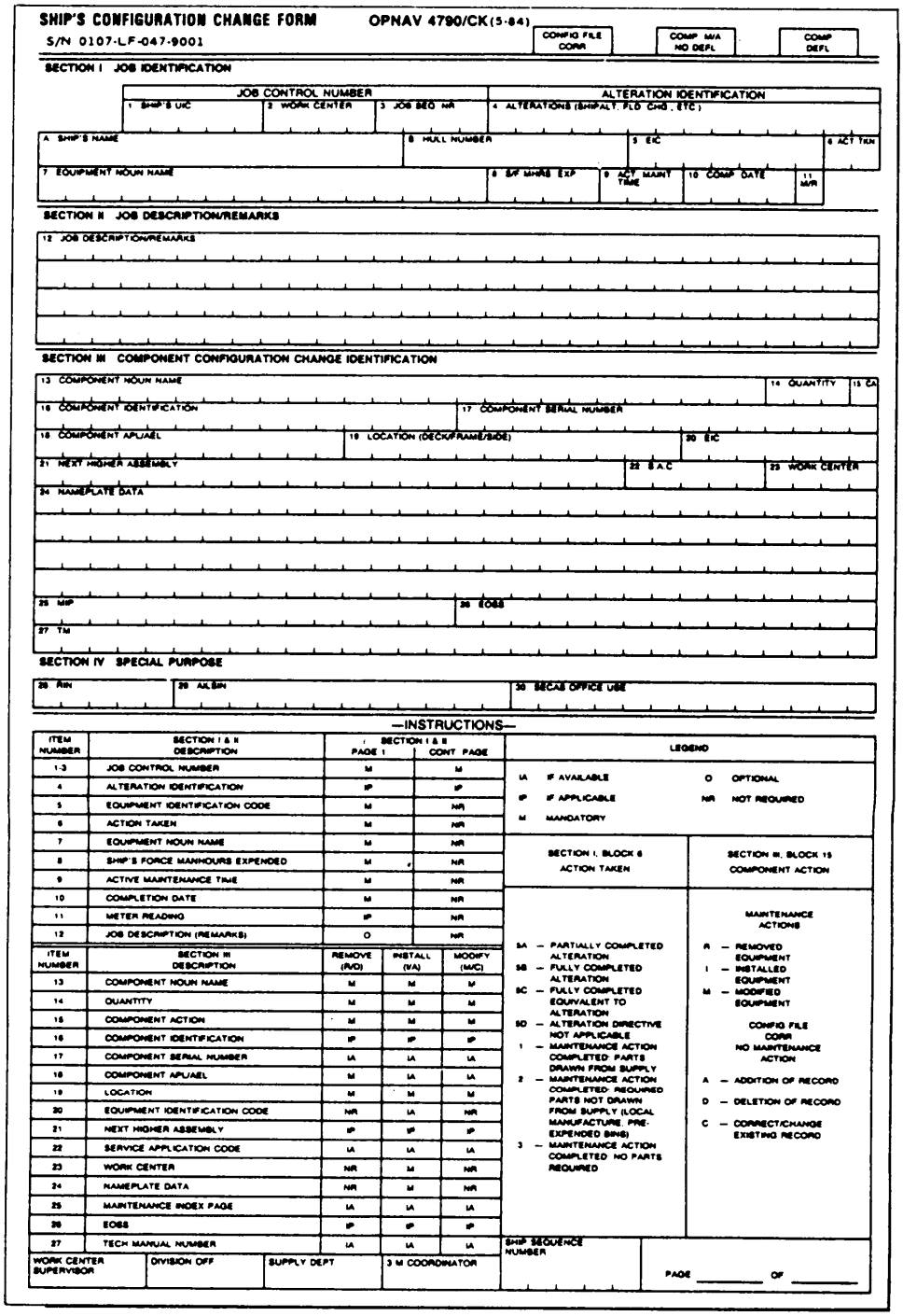
57. LEAD WC	58. SCHED. START	59. SCHED. COMP.	60. EST. MHRS	61. K/O	62. TASK	63. ASST WC	64. SCHED. START	65. SCHED. COMP	66. EST. MHRS	67. K/O	68. TASK
38A	6245	6260	0140								
69. ASST WC	**70. SCHED. START**	**71. SCHED COMP**	**72. EST. MHRS**	**73. K/O**	**74. TASK**	**75. ASST WC**	**76. SCHED. START**	**77. SCHED. COMP.**	**78. EST. MHRS**	**79. K/O**	**80. TASK**
51A	6247	6258	0040								
81. ASST WC	**82. SCHED. START**	**83. SCHED. COMP.**	**84. EST. MHRS**	**85. K/O**	**86. TASK**	**87. ASST WC**	**88. SCHED. START**	**89 SCHED. COMP.**	**90 EST MHRS.**	**91. K/O**	**92. TASK**
52A	6245	6259	0100								

93. REPAIR ACT. UIC	94. WORK REQ. ROUTINE NO.	95. EST. MANDAYS	96. EST. MANDAY COST $	97. EST. MATERIAL COST $

98. EST. TOTAL COST $	99. JOB ORDER NUMBER	100. LEAD P&E CODE	101. DATE OF ESTIMATE

102. FINAL ACTION	103. MHRS EXPENDED	104. DATE COMPLETED	G. COMPLETED BY (Signature & Rank)	H. ACCEPTED BY (Signature & Rate/Rank)

Figure 2-5.—OPNAV 4790/2R, Automated Work Request (AWR).



SHIP'S CONFIGURATION CHANGE FORM OPNAV 4790/CK(5-84)

S/N 0107-LF-047-9001

CONFIG FILE CORR | COMP N/A NO DEFL | COMP DEFL

SECTION I JOB IDENTIFICATION

JOB CONTROL NUMBER: 1 SHIP'S UIC | 2 WORK CENTER | 3 JOB SEQ NR

4 ALTERATIONS (SHIPALT, FLD CHG, ETC) — ALTERATION IDENTIFICATION

A SHIP'S NAME | B HULL NUMBER | C EIC | D ACT TKN

7 EQUIPMENT NOUN NAME | 8 S/F MNHRS EXP | 9 ACT MAINT TIME | 10 COMP DATE | 11 M/R

SECTION II JOB DESCRIPTION/REMARKS

12 JOB DESCRIPTION/REMARKS

SECTION III COMPONENT CONFIGURATION CHANGE IDENTIFICATION

13 COMPONENT NOUN NAME | 14 QUANTITY | 15 CA

16 COMPONENT IDENTIFICATION | 17 COMPONENT SERIAL NUMBER

18 COMPONENT APL/AEL | 19 LOCATION (DECK/FRAME/SIDE) | 20 EIC

21 NEXT HIGHER ASSEMBLY | 22 S A C | 23 WORK CENTER

24 NAMEPLATE DATA

25 MIP | 26 EOSS

27 TM

SECTION IV SPECIAL PURPOSE

28 RIN | 29 ALSIN | 30 SECAS OFFICE USE

—INSTRUCTIONS—

ITEM NUMBER	SECTION I & II DESCRIPTION	SECTION I & II PAGE 1	SECTION I & II CONT PAGE
1-3	JOB CONTROL NUMBER	M	M
4	ALTERATION IDENTIFICATION	IP	IP
5	EQUIPMENT IDENTIFICATION CODE	M	NR
6	ACTION TAKEN	M	NR
7	EQUIPMENT NOUN NAME	M	NR
8	SHIP'S FORCE MANHOURS EXPENDED	M	NR
9	ACTIVE MAINTENANCE TIME	M	NR
10	COMPLETION DATE	M	NR
11	METER READING	IP	NR
12	JOB DESCRIPTION (REMARKS)	O	NR

ITEM NUMBER	SECTION III DESCRIPTION	REMOVE (R/D)	INSTALL (I/A)	MODIFY (M/C)
13	COMPONENT NOUN NAME	M	M	M
14	QUANTITY	M	M	M
15	COMPONENT ACTION	M	M	M
16	COMPONENT IDENTIFICATION	IP	IP	IP
17	COMPONENT SERIAL NUMBER	IA	IA	IA
18	COMPONENT APL/AEL	M	IA	IA
19	LOCATION	M	M	M
20	EQUIPMENT IDENTIFICATION CODE	NR	IA	NR
21	NEXT HIGHER ASSEMBLY	IP	IP	IP
22	SERVICE APPLICATION CODE	IA	IA	IA
23	WORK CENTER	NR	M	NR
24	NAMEPLATE DATA	NR	M	NR
25	MAINTENANCE INDEX PAGE	IA	IA	IA
26	EOSS	IP	IP	IP
27	TECH MANUAL NUMBER	IA	IA	IA

LEGEND

IA IF AVAILABLE | O OPTIONAL

IP IF APPLICABLE | NR NOT REQUIRED

M MANDATORY

SECTION I, BLOCK 6 ACTION TAKEN

5A — PARTIALLY COMPLETED ALTERATION

5B — FULLY COMPLETED ALTERATION

5C — FULLY COMPLETED EQUIVALENT TO ALTERATION

5D — ALTERATION DIRECTIVE NOT APPLICABLE

1 — MAINTENANCE ACTION COMPLETED: PARTS DRAWN FROM SUPPLY

2 — MAINTENANCE ACTION COMPLETED: REQUIRED PARTS NOT DRAWN FROM SUPPLY (LOCAL MANUFACTURE, PRE-EXPENDED BINS)

3 — MAINTENANCE ACTION COMPLETED: NO PARTS REQUIRED

SECTION III, BLOCK 15 COMPONENT ACTION

MAINTENANCE ACTIONS

R — REMOVED EQUIPMENT

I — INSTALLED EQUIPMENT

M — MODIFIED EQUIPMENT

CONFIG FILE CORR NO MAINTENANCE ACTION

A — ADDITION OF RECORD

D — DELETION OF RECORD

C — CORRECT/CHANGE EXISTING RECORD

WORK CENTER SUPERVISOR | DIVISION OFF | SUPPLY DEPT | 3 M COORDINATOR | SHIP SEQUENCE NUMBER | PAGE _____ OF _____

Figure 2-6A.—OPNAV 4790/CK, Ship's Configuration Change Form.

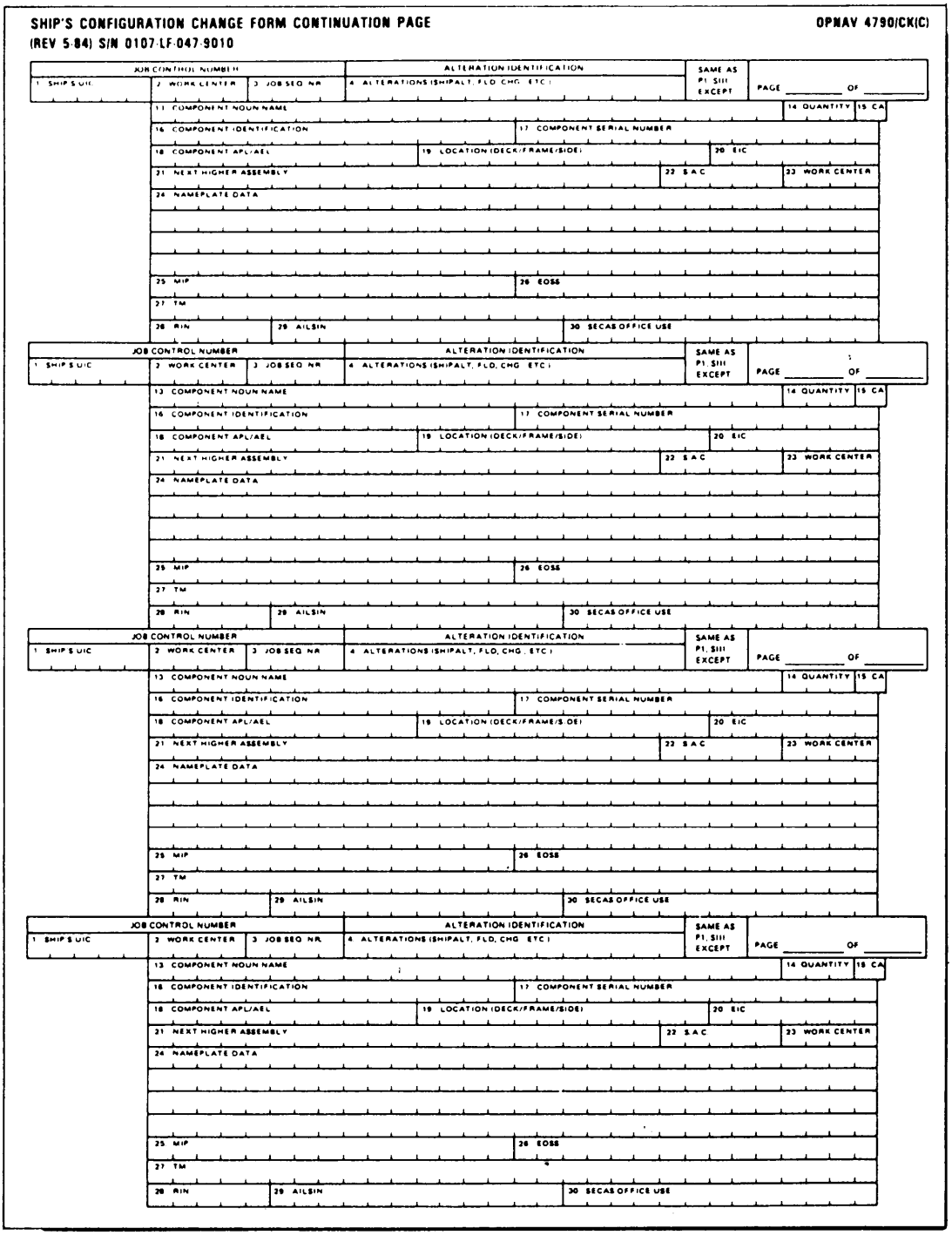


Figure 2-6B.—OPNAV 4790/CK(C), Ship's Configuration Change Form Continuation Page

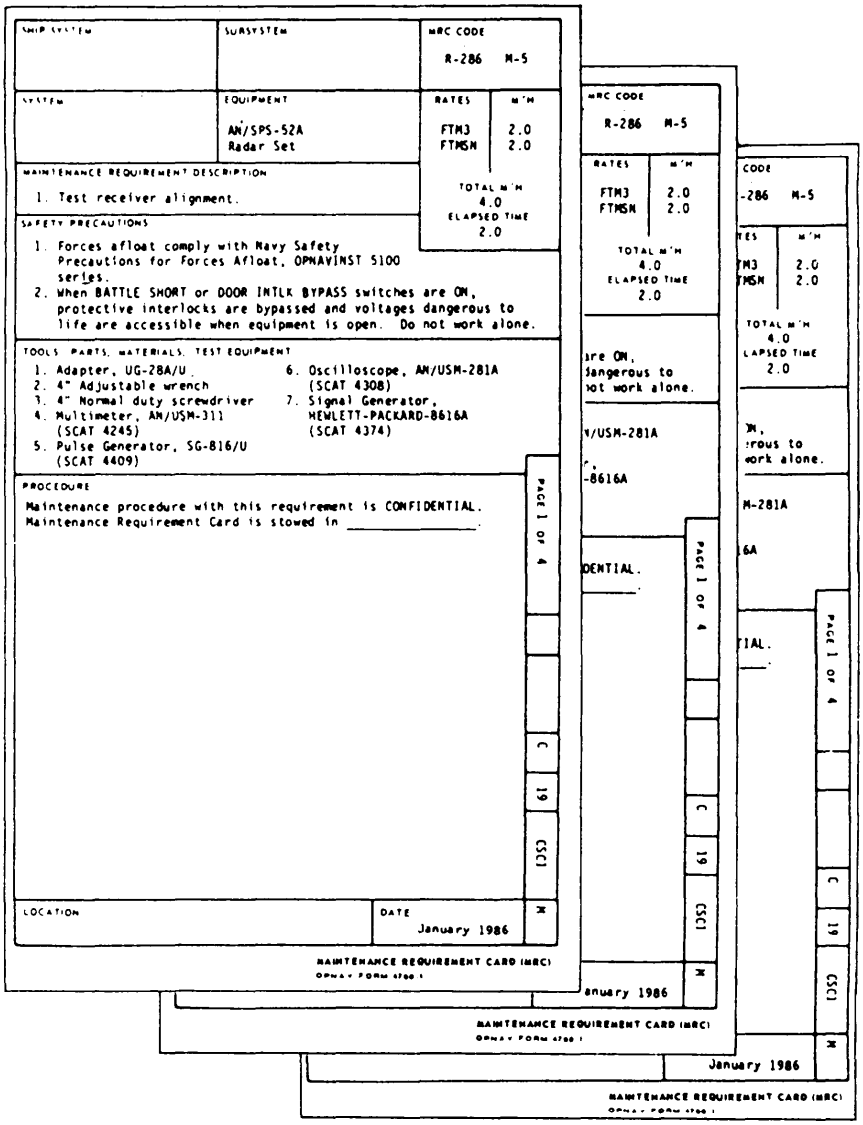


Figure 2-7.—Maintenance Requirement Cards

the "who, what, when, how, and with what resources" associated with a specific maintenance requirement. (See figure 2-7.)

Some MRCs have equipment guide lists (EGLs) accompanying them to serve as location guides for a number of identical equipments. A blank EGL is shown in figure 2-8.

List of Effective Pages (LOEP)

The work center LOEP contains a list of the Maintenance Index Pages (MIPs) and a brief description of the systems and equipments in the work center.

Maintenance Index Page (MIP)

A MIP contains a brief description of the maintenance requirements on all the MRCs for each item of equipment.

Schedules

Maintenance is scheduled on cycle, quarterly, and weekly schedules.

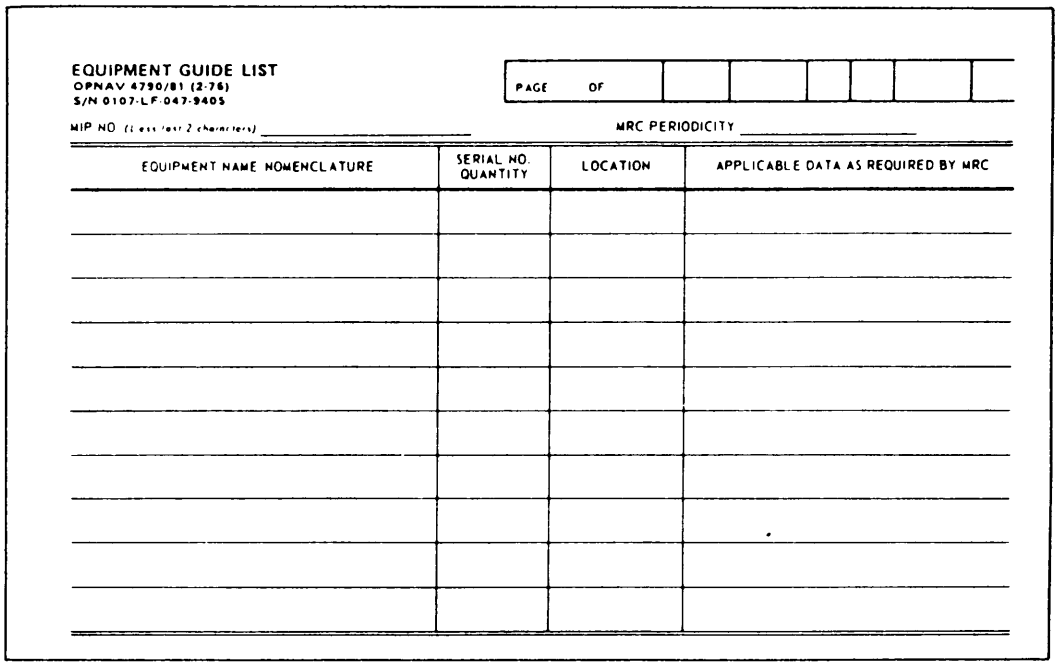
Cycle Schedule-Displays the PMS requirements to be performed during the period between major overhauls.

Quarterly Schedule-Displays each work center's PMS requirements to be performed during a specific 3-month period.

Weekly Schedule-Displays the planned maintenance scheduled for accomplishment in a work center during a specific week.

PMS Feedback Report (FBR)-OPNAV 4790/7B

The PMS feedback report, shown in figure 2-9, provides the command with an easy method of



EQUIPMENT GUIDE LIST
OPNAV 4790/81 (2-76)
S/N 0107-LF-047-9405

PAGE OF

MIP NO (Less last 2 characters) _____ MRC PERIODICITY _____

EQUIPMENT NAME NOMENCLATURE	SERIAL NO. QUANTITY	LOCATION	APPLICABLE DATA AS REQUIRED BY MRC

Figure 2-8.—Standard Equipment Guide List (EGL).

recommending changes to maintenance requirement cards, ordering MRCs that have been lost or mutilated, and notifying the systems commands of any discrepancies in coverage.

The FBR is a five-part form composed of an original and four copies. Instructions for preparing and submitting the form are printed on the back of the last copy as illustrated in figure 2-10. You can obtain these forms through the Navy Supply System. For detailed instructions on 3-M procedures, refer to OPNAVINST 4790.4B.

THE TECHNICAL LIBRARY

Now that we have discussed the paperwork needed to complete maintenance actions, we will look at the technical library that should be setup and maintained to provide technicians the technical documents they need to perform maintenance.

In the following paragraphs we will discuss various manuals and publication that will give you a good starting point for a technical library.

PUBLICATION APPLICABILITY LISTING (PAL)

The PAL lists technical manuals, operating instruction charts, performance standards sheets, maintenance standards books, and technical manual changes for operating and maintaining onboard systems and equipments that are under the technical cognizance of NAVSEASYSCOM.

The PAL is produced from the Ships' Technical Publications System, NAVSEA's technical manual information system, and is maintained by the Naval Ship's Data Support System (NSDSS), Port Hueneme, California. Although the PAL provides assistance in determining the publications needs of the ship or shore station to which it applies, it is not a list of required publications.

The PAL contains four separately bound volumes, each having two parts:

- Volume 1–General Publications

  Part 1–Electronics, HM&E, and Miscellaneous

  Part 2–Weapons

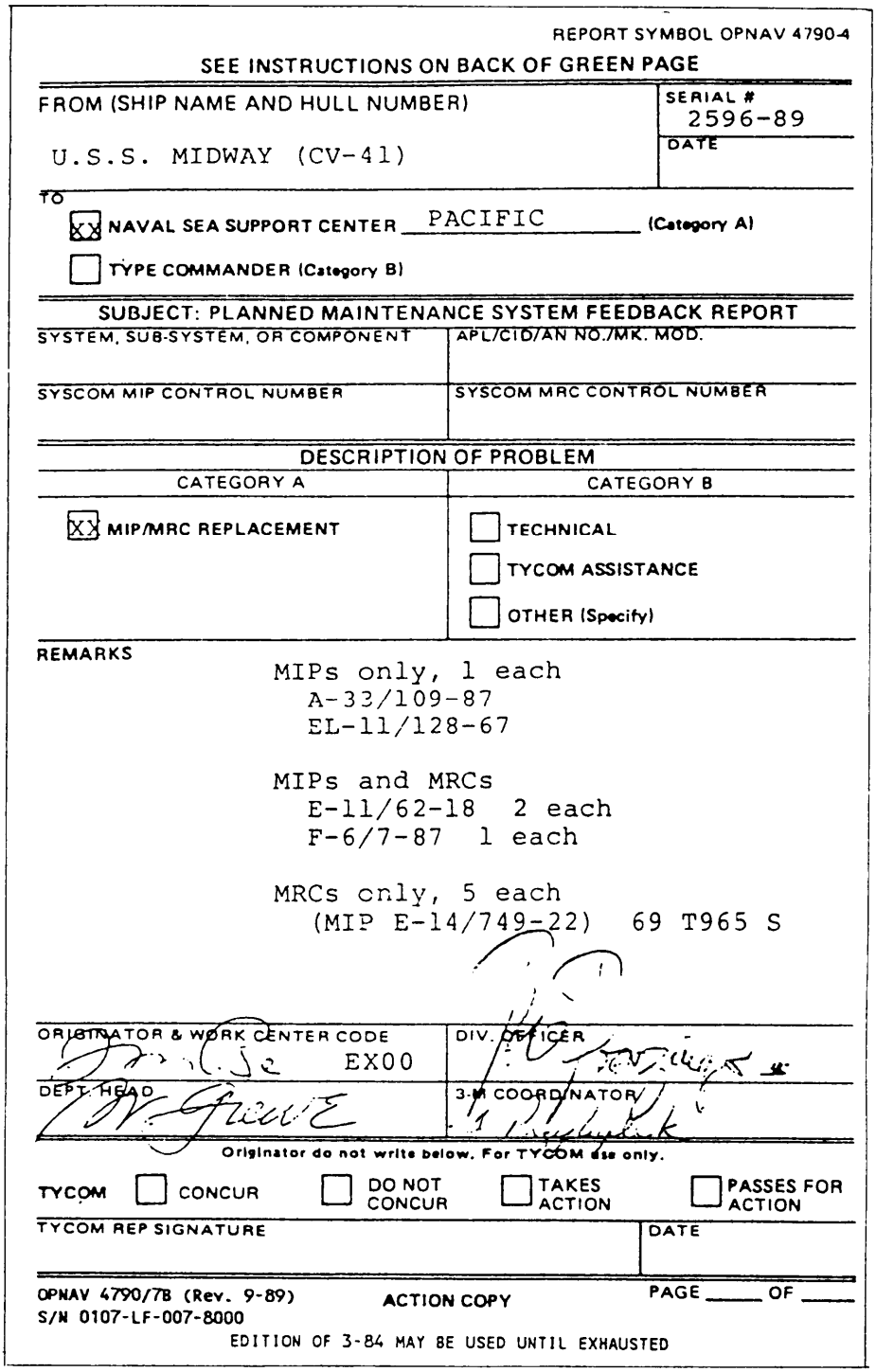
Volume 1 lists only general and ship-applicable publications that do not relate to equipments or systems. It does not include any of the publications that appear in Volumes 2, 3, and 4.

- Volume 2–Electronics

  Part 1–Equipment sequence

  Part 2–Publication sequence

- Volume 3–HM & E



REPORT SYMBOL OPNAV 4790-4

SEE INSTRUCTIONS ON BACK OF GREEN PAGE

FROM (SHIP NAME AND HULL NUMBER)

U.S.S. MIDWAY (CV-41)

SERIAL # 2596-89

DATE

TO

[XX] NAVAL SEA SUPPORT CENTER PACIFIC (Category A)

[ ] TYPE COMMANDER (Category B)

SUBJECT: PLANNED MAINTENANCE SYSTEM FEEDBACK REPORT

SYSTEM, SUB-SYSTEM, OR COMPONENT

APL/CID/AN NO./MK. MOD.

SYSCOM MIP CONTROL NUMBER

SYSCOM MRC CONTROL NUMBER

DESCRIPTION OF PROBLEM

CATEGORY A	CATEGORY B
[XX] MIP/MRC REPLACEMENT	[ ] TECHNICAL
	[ ] TYCOM ASSISTANCE
	[ ] OTHER (Specify)

REMARKS

MIPs only, 1 each
A-33/109-87
EL-11/128-67

MIPs and MRCs
E-11/62-18 2 each
F-6/7-87 1 each

MRCs only, 5 each
(MIP E-14/749-22) 69 T965 S

ORIGINATOR & WORK CENTER CODE EX00

DIV. OFFICER

DEPT. HEAD

3-M COORDINATOR

Originator do not write below. For TYCOM use only.

TYCOM [ ] CONCUR [ ] DO NOT CONCUR [ ] TAKES ACTION [ ] PASSES FOR ACTION

TYCOM REP SIGNATURE

DATE

OPNAV 4790/7B (Rev. 9-89) ACTION COPY PAGE ____ OF ____

S/N 0107-LF-007-8000

EDITION OF 3-84 MAY BE USED UNTIL EXHAUSTED

Figure 2-9.—OPNAV 4790/7B, PMS Feedback Report (FBR).

Part 1–Equipment sequence

Part 2–Publication sequence

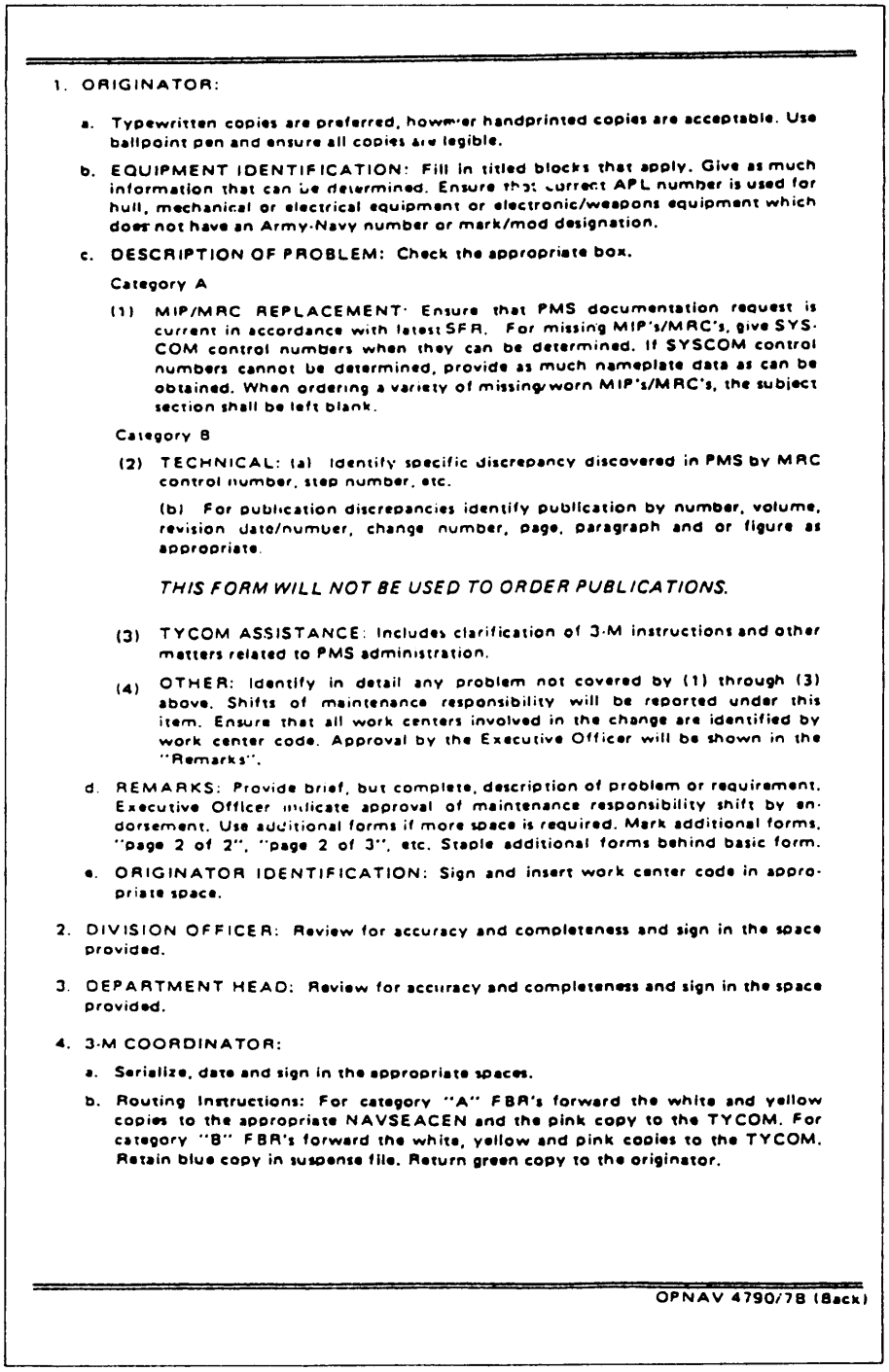
- Volume 4–Weapons

Part 1–Equipment sequence

Part 2–Publication sequence

MAINTENANCE STANDARDS HANDBOOKS

Maintenance standards handbooks describe a series of specially developed preventive maintenance procedures that, when performed as directed, will reveal areas of subnormal performance and provide for



1. ORIGINATOR:

   a. Typewritten copies are preferred, however handprinted copies are acceptable. Use ballpoint pen and ensure all copies are legible.

   b. EQUIPMENT IDENTIFICATION: Fill in titled blocks that apply. Give as much information that can be determined. Ensure that correct APL number is used for hull, mechanical or electrical equipment or electronic/weapons equipment which does not have an Army-Navy number or mark/mod designation.

   c. DESCRIPTION OF PROBLEM: Check the appropriate box.

      Category A

      (1) MIP/MRC REPLACEMENT: Ensure that PMS documentation request is current in accordance with latest SFR. For missing MIP's/MRC's, give SYSCOM control numbers when they can be determined. If SYSCOM control numbers cannot be determined, provide as much nameplate data as can be obtained. When ordering a variety of missing/worn MIP's/MRC's, the subject section shall be left blank.

      Category B

      (2) TECHNICAL: (a) Identify specific discrepancy discovered in PMS by MRC control number, step number, etc.

      (b) For publication discrepancies identify publication by number, volume, revision date/number, change number, page, paragraph and or figure as appropriate.

      THIS FORM WILL NOT BE USED TO ORDER PUBLICATIONS.

      (3) TYCOM ASSISTANCE: Includes clarification of 3-M instructions and other matters related to PMS administration.

      (4) OTHER: Identify in detail any problem not covered by (1) through (3) above. Shifts of maintenance responsibility will be reported under this item. Ensure that all work centers involved in the change are identified by work center code. Approval by the Executive Officer will be shown in the "Remarks".

   d. REMARKS: Provide brief, but complete, description of problem or requirement. Executive Officer indicate approval of maintenance responsibility shift by endorsement. Use additional forms if more space is required. Mark additional forms, "page 2 of 2", "page 2 of 3", etc. Staple additional forms behind basic form.

   e. ORIGINATOR IDENTIFICATION: Sign and insert work center code in appropriate space.

2. DIVISION OFFICER: Review for accuracy and completeness and sign in the space provided.

3. DEPARTMENT HEAD: Review for accuracy and completeness and sign in the space provided.

4. 3-M COORDINATOR:

   a. Serialize, date and sign in the appropriate spaces.

   b. Routing Instructions: For category "A" FBR's forward the white and yellow copies to the appropriate NAVSEACEN and the pink copy to the TYCOM. For category "B" FBR's forward the white, yellow and pink copies to the TYCOM. Retain blue copy in suspense file. Return green copy to the originator.

OPNAV 4790/7B (Back)

Figure 2-10.—Instructions for Preparing the PMS Feedback Report (reverse side of FBR form).

effective mechanical and electrical maintenance of the equipment. The installing activity performs those procedures on the equipment when it is operating properly and publishes the results as "designated reference standards." The designated reference standards collectively represent normal performance. This allows you to compare the results of a scheduled test with the reference standards to identify, properly analyze, and correct abnormalities.

NAVAL SHIPS' TECHNICAL MANUAL (NSTM)

The NSTM is a set of books (chapters) that contain general information on a variety of topics. You can find

a complete listing of the NSTM chapters in chapter 001, *General - NSTM Publications Index and User Guide.* The chapters we have listed below are related to your job, both as a technician and as a member of a ship's or station's organization.

NSTM Chapter 79–Practical Damage Control (DC)

This chapter provides broad guidance for establishing a DC organization. This guidance is designed to help organizations plan before damage occurs, spend a minimal amount of time localizing damage that does occur, and make emergency repairs or restoration as quickly as possible after damage occurs.

NSTM Chapter 300–Electrical Plant

This chapter provides information and instructions on electrical equipment, electrical safety precautions, electrical insulation and insulation resistance, and maintenance reconditioning of electrical equipment. It provides the requirements we, as ETs, must meet in a shipboard safety program, including use and maintenance of organizational electrical and electronic equipment and personal electrical and electronic equipment.

NSTM Chapter 400–Electronics

This chapter provides major policies and instructions pertaining to maintenance of electronic equipment and safety information aboard active and reserve ships.

NSTM Chapter 631-Preservation of Ships in Service

This chapter provides instructions, requirements, and information for prevention of corrosion of ships, boats, and small craft. Topics include surface preparation, painting, and application of other preventive measures.

NSTM Chapter 634–Deck Coverings

This chapter provides information concerning materials, installation procedures, maintenance and repair of deck coverings, gratings, sealing methods, and caulking compounds used for sealing deck seams.

ELECTRONICS INSTALLATION AND MAINTENANCE BOOK (EIMB)

The EIMB is the medium for collecting, publishing, and distributing, in one convenient source, safety information, maintenance policies and philosophies, installation standards and practices, and overall electronic equipment and material-handling procedures required by Chapter 400 of the *Naval Ships' Technical Manual.* The EIMB is organized into a 13-volume series of individual books.

EIMB General Handbook

This handbook provides data pertaining to administration, supply, publications, and safety matters, and contains the subject index for information contained in the other handbooks.

EIMB Installation Standards Handbook

This handbook issues approved standards, techniques, and practices for the installation of electronic equipment aboard ships.

EIMB Electronic Circuits Handbook

This handbook provides the theory of operation and circuit description of basic vacuum tube and semiconductor circuits.

EIMB Test Methods and Practices Handbook

This handbook provides technicians with reference information on the fundamentals of test methods and basic measurements, step-by-step procedures for testing typical electronic circuits and equipment, and fictional descriptions of the theory of operation of the test equipment used and circuits tested.

EIMB Reference Data Handbook

This handbook contains an encyclopedic presentation of useful and informative definitions,

abbreviations, formulas, and other general data related to electronics installations and maintenance.

EIMB EMI Reduction Handbook

This handbook contains techniques and procedures for the elimination or reduction of electromagnetic interference created by own force's electromagnetic radiating devices.

EIMB General Maintenance Handbook

This handbook contains routine maintenance concepts, techniques, and procedures common to all electronic and electrical equipment.

EIMB Equipment-Oriented Handbooks

For the basic equipment category, each of the six handbooks contains general servicing information; servicing information for specific equipments; a field change identification guide that provides field change information for all equipments of the basic equipment category; and functional descriptions common to the equipment of the basic equipment category. The six equipment-oriented handbooks are as follows:

1. Communications
2. Radar
3. Sonar
4. Test Equipment
5. Radiac
6. Countermeasures

Periodically, the equipment-oriented handbooks are updated by incorporating the *Engineening Information Bulletin* (EIB) articles. The EIMBs are an excellent source of basic information that can be used as a training tool for your workcenter. If space is available, you will benefit from having a complete set for your technical library.

OTHER PUBLICATIONS

There are many other useful publications throughout the fleet. However, because of the vast number, we will only describe a few in the following paragraphs.

Shipboard Antenna Systems Manuals

These five manuals serve as a source of information for personnel concerned with the installation and maintenance of shipboard antennas. The information they contain supplements, but does not supersede, existing specifications. The following is a list of what each volume contains:

- Volume 1–Communications Antenna Fundamentals
- Volume 2–Installation Details, Communications Antenna Systems
- Volume 3–Antenna Couplers, Communications Antenna Systems
- Volume 4–Testing and Maintenance, Communications Antenna Systems
- Volume 5–Antenna Data Sheets

Miniature/Microminiature (2M) Electronic Repair Program

While this publication (three volumes under one cover) gives procedures and techniques, personnel must be formally trained and certified to make high-quality, reliable repairs to state-of-the-art electronic printed circuits and modules.

Shipboard Bonding, Grounding, and Other Techniques for Electromagnetic Compatibility and Safety, Military Standard 1310 (NAVY)

The requirements of this standard apply to all new shipboard installations and to any part of an existing installation that is being modified. The procedures and methods specified in this standard apply to any situation that requires the technician to (1) bond, ground, insulate, or use nonmetallic materials to provide electromagnetic compatibility; (2) provide personnel safety from electrical shock hazards; (3) safeguard electrical transmissions of classified information; and (4) provide a dc reference ground. We recommend this publication as a MUST reading assignment for all Electronics Technicians.

Electromagnetic Radiation Hazards (Hazards to Personnel, Fuel, and Other Flammable Material)

This manual prescribes operating procedures and precautions to prevent injury to personnel, ignition of

volatile vapors, and premature initiation of electroexplosive devices in ordnance caused by exposure to environmental electromagnetic radiation.

Data in this manual are provided in two volumes as follows:

- Volume I

  Hazards to Personnel, Fuel, and Other Flammable Material (U)

- Volume II

  Part I–Hazards to Unclassified Ordnance Systems (U)

  Part II–Hazards to Classified Ordnance Systems (U)

Volume I and Volume II, Part One, are unclassified All classified data are contained in Volume II, Part Two.

Installation Criteria for Shipboard Secure Electrical Information Processing Systems, Military Standard 1680 (SHIPS)

This standard sets forth the design and installation criteria that apply to shipboard secure electrical information processing systems, including detailed hardware and equipment requirements and the applicable inspection and reporting procedures and documentation. Installation and maintenance technicians of these processing systems MUST be well versed in the contents of this standard.

General-Purpose Electronic Test Equipment, Military Standard 1364 (Series) (NAVY)

This standard identifies standard General-purpose Electronic Test Equipment (GPETE), GPETE support items, and General Use Portable Electrical Equipment (GUPEE) that are suitable for Navy use and for which the Naval Sea Systems Command exercises material support responsibility by management of item entry. This standard also establishes uniform procedures for submission of applications to procure nonstandard GPETE.

Military Specification Manuals, Technical: Functionally Oriented Maintenance Manuals (FOMM) for Electronic, Electromechanical, and Ordnance Equipment Systems, and Platforms, Military Specification Mil-M-24100C

This specification sets forth the content and format requirements for FOMMS, and their revisions and changes, necessary for the installation operation, repair (organizational-level, intermediate-level, and depot-level), and parts support of equipment, systems, and subsystems without the services of manufacturer's representatives.

Procedures for Conducting a Shipboard Electromagnetic Interference (EMI) Survey (Surface Ships), Military Standard 1605 (SHIPS)

This standard provides detailed procedures for conducting an electromagnetic interference survey aboard surface ships.

Navy Electricity and Electronics Training Series (NEETS)

At present there are 24 NEETS modules. These modules contain a vast amount of information from an introduction to matter, energy, and direct current to an introduction to fiber optics.

The NEETS modules are high quality training aids as well as excellent review publications for basic electronics for all ETs.

CATALOGS, LISTS, INDEXES, AND DIRECTORIES

The following paragraphs will discuss catalogs, lists, indexes and directories of electronic equipment.

Equipment Identification Code (EIC) Master Index

This index provides a listing of equipment identification codes (EICs) in two sections. Section I lists EIC numbers in numerical sequence and identifies the equipment nomenclature assigned to each EIC number. Section II is the complement of Section I. It lists nomenclature in alphanumerical sequence and identifies the EIC numbers assigned to equipment.

Guide for User Maintenance of NAVSEA Technical Manuals

The maintenance of up-to-date technical manuals aboard your command is essential to the operational readiness of the command systems and equipment. This guide will bean important part of the technical library.

Electrostatic Discharge Control Handbook for Protection of Electrical and Electronic Parts, Assemblies and Equipment (Excluding electrically initiated explosive devices) (METRIC), Military Handbook 263A

This handbook provides guidance, not requirements, for the establishment and implementation of an Electrostatic Discharge (ESD) Control Program according to the requirements of MIL-STD-1686. This document applies to the protection of electrical and electronic parts, assemblies and equipment from damage due to ESD. It does not provide information for the protection of electrically initiated explosive devices.

Metrology Automated System for Uniform Recall and Reporting (MEASURE) User's Manual

This manual outlines the procedures that apply to Navy calibration facilities using the system, ship and shore activities obtaining services from them, and other military activities whose use of MEASURE is in effect.